

WHAT IS CLAIMED IS:

1. A bearing apparatus for a wheel of vehicle comprising a hub wheel (1) having a wheel mounting flange (4) integrally formed therewith at its one end and an axially extending cylindrical portion (5) of a smaller diameter; a wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43) including a double row rolling bearing arranged on the cylindrical portion (5); and a knuckle (2) of light metal, wherein the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43) is press-fitted into the knuckle (2) via a predetermined interference and the hub wheel (1) is rotatably supported relative to the knuckle (2) via the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43) characterized in that:

at least one of an inner circumferential surface of an inner ring (13, 26, 33, 39, 44) and an outer circumferential surface of an outer ring (12, 21, 25, 30, 32, 38) of the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43) is formed with an annular groove (or grooves) (18, 22, 34, 45) and each annular groove (18, 22, 34, 45) is filled with a resin band (19, 23, 35, 46) of heat resisting synthetic resin formed by injection molding.

2. A bearing apparatus for a wheel of vehicle of claim 1 wherein each resin band (19, 23, 35, 46) is made of synthetic resin of polyamide family having the coefficient of linear thermal expansion of $(8\sim 16) \times 10^{-5}/^{\circ}\text{C}$.

3. A bearing apparatus for a wheel of vehicle of claim 1 wherein each resin band (19, 23, 35, 46) is formed so that it projects from the circumferential surface of the inner and/or outer rings by $0\sim 50\ \mu\text{m}$.

4. A bearing apparatus for a wheel of vehicle of any one of claim 1 wherein each annular groove (18, 22, 34, 45) is formed in a load supporting region of the inner or outer ring.

5. A bearing apparatus for a wheel of vehicle of any one of claim 1 wherein each annular groove (18, 22, 34, 45) is formed as an eccentric groove of which center is offset a predetermined amount from the central axis of the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43).

6. A bearing apparatus for a wheel of vehicle of any one of claim 1 wherein the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43) is secured with being sandwiched between the hub wheel (1) and a shoulder (9) of an outer joint member (8) forming a constant velocity universal joint via disc shaped expansion compensating members (41, 42) made of heat resisting synthetic resin, and wherein a predetermined preload is applied to the wheel bearing (3, 20, 24, 29, 31, 36, 37, 40, 43).

7. A bearing apparatus for a wheel of vehicle of claim 6 wherein an annular groove is formed on each end face of larger diameter of the inner ring and the annular groove is filled with the expansion compensating member formed by injection molding.